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Docket No. UV-161

Applicant(s) : Peter C. Boylan, III and Michael D. Ellis  
For : INTERACTIVE TELEVISION SYSTEM  
WITH PROGRAMMING-RELATED LINKS

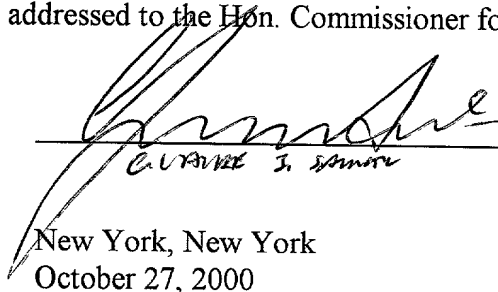
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TRANSMITTAL LETTER FOR  
ORIGINAL PATENT APPLICATION

Sir

Transmitted herewith for filing are the [X] specification; [X] claims; [X] abstract; [X] declaration and [X] power of attorney, for the above-identified patent application.

Also transmitted herewith are:

[X] 18 sheets of:

[ ] Formal drawings.

[X] Informal drawings. Formal drawings will be filed during the pendency of this application.



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from which priority is claimed.

☐ An assignment of the invention to \_\_\_\_\_

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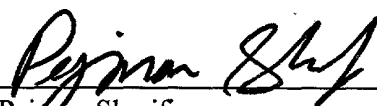
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FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE
BASIC FEE				\$710.00
TOTAL CLAIMS	43	- 20 = 23	X \$ 18 =	\$414.00
INDEPENDENT CLAIMS	2	- 3 =	X \$ 80 =	0
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIMS				+ \$270 = \$1124.00
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- ☒ A check in the amount of \$1124.00 in payment of the filing fee is transmitted herewith.
- ☐ This application is being filed unaccompanied by a filing fee. The appropriate filing fee will be paid in response to a Notice to File Missing Parts, pursuant to 37 C.F.R. § 1.53(f).
- ☒ The Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 C.F.R. § 1.16, in connection with the paper(s) transmitted herewith, or credit any overpayment of same, to deposit Account No. 06-1075. A duplicate copy of this transmittal letter is transmitted herewith.
- ☐ Amend the specification by inserting before the first line the sentence: -- This is a ☐ continuation-in- part, of application Serial No.: \_\_\_\_\_, filed \_\_\_\_\_  
entitled \_\_\_\_\_
- ☐ Please charge \$\_\_\_\_ to Deposit Account No. 06-1075 in payment of the filing fee. A duplicate copy of this transmittal letter is transmitted herewith.

  
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## APPLICATION INFORMATION

Title Line One:: INTERACTIVE TELEVISION SYSTEM WITH PROGR  
Title Line Two:: AMMING-RELATED LINKS  
Total Drawing Sheets:: 18  
Formal Drawings?:: No  
Application Type:: Utility  
Docket Number:: UV-161  
Secrecy Order in Parent Appl.?:: No

## REPRESENTATIVE INFORMATION

Representative Customer Number:: 1473  
Registration Number One:: 30709  
Registration Number Two:: 40934  
Registration Number Three:: 45097  
Registration Number Four:: 46109

## CONTINUITY INFORMATION

This application is a:: NON PROV. OF PROVISIONAL  
> Application One:: 60/162484  
Filing Date:: 10-29-1999

This application is a:: NON PROV. OF PROVISIONAL  
> Application Two:: 60/165610  
Filing Date:: 11-15-1999

Source:: PrintEFS Version 1.0.1

INTERACTIVE TELEVISION SYSTEM WITH  
PROGRAMMING-RELATED LINKS

This application claims the benefit of  
United States provisional application No. 60/162,484,  
5 filed October 29, 1999, and United States provisional  
application 60/165,610, filed November 15, 1999.

Background of the Invention

This invention relates to interactive  
television systems such as interactive television  
10 program guide systems, and more particularly, to  
linking techniques in interactive television systems.

Cable, satellite, and broadcast television  
systems provide viewers with a large number of  
television channels. Viewers have traditionally  
15 consulted printed television program schedules to  
determine the programs being broadcast at a particular  
time. More recently, interactive electronic television  
program guides have been developed that allow  
television program information to be displayed on a  
20 viewer's television.

Interactive program guides are typically  
implemented on set-top boxes. Such program guides  
allow users to view television program listings in  
different display formats. For example, a user may  
25 instruct the program guide to display a grid of program

listings organized in a channel-ordered or a time-ordered list. Users may also search and sort program listings by theme (e.g., movies, sports, etc.) or by title (i.e., alphabetically). The user may purchase a  
5 pay program from the program guide by placing the highlight region on a program listing and pressing an "OK" key. Some systems allow the user to select a program for recording by placing the highlight region on a program listing and pressing a "record" key.

10 It is an object of the present invention to provide an interactive television system that supports programming-related links between various applications.

#### Summary of the Invention

This and other objects of the invention are  
15 accomplished in accordance with the principles of the present invention by providing an interactive television system that supports programming-related links. Programming-related links may be provided in non-program-guide applications.

20 An interactive television program guide application and a non-program-guide interactive television application (i.e., an application involving non-program-guide resources) may be implemented on user television equipment. The non-program-guide  
25 application may display screens that include information that is related to programming. For example, the non-program-guide application may display screens that are related to a television program, a television series, a television channel or network, a  
30 package of television programming, etc. The programming-related information may be an advertisement, graphic, word, phrase, etc. The system may provide a user with an opportunity to select the

programming-related information that is displayed.

When the user selects the information, an overlay or a display screen may be displayed that is related to the selected information. The overlay or display screen  
5 may be displayed by the program guide application. The display screen or overlay that is displayed when the information is selected may vary based on attributes of the programming to which the selected information is related.

10 The display screen or overlay may include a graphic that is related to the programming, a description of the programming, a video that is related to the programming, programming-related options for accessing program guide application features,  
15 advertisements, program listings, etc. If desired, an advertisement that is related to the programming may be displayed.

A database of programming information such as a program guide database may be accessed to determine  
20 which programming in the user's service area (if any) is related to information that has been selected from a non-program-guide display screen.

Information may be selected by, for example, positioning a highlight region on the information of  
25 interest and pressing an enter or select or OK key or an information key. An on-screen indicator may be associated with displayed information to indicate to a user that the information is related to programming. If desired, a display screen or overlay for related  
30 programming may be displayed when the indicator is selected. A user may be provided with an opportunity to exit a programming-related display screen or overlay to allow the user to return to an initiating non-program-guide display screen.



Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

5 Brief Description of the Drawings

FIG. 1 is a diagram of an illustrative interactive television system in accordance with the present invention.

10 FIG. 2 is a diagram of an illustrative digital video recorder and television in accordance with the present invention.

FIG. 3 is a diagram of an illustrative user television equipment in accordance with the present invention.

15 FIG. 4 is a flow chart of illustrative steps involved in displaying a display screen or overlay for programming that is related to information that was selected from a non-program-guide application in accordance with the present invention.

20 FIG. 5 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 4 in accordance with the present invention.

25 FIG. 6 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG 4 in accordance with the present invention.

30 FIG. 7 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 4 in accordance with the present invention.

FIG. 8 is a diagram of an illustrative sequence of illustrative display screens that may be

provided based on the illustrative steps of FIG. 4 in accordance with the present invention.

FIG. 9 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 4 in accordance with the present invention.

FIG. 10 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 4 in accordance with the present invention.

FIG. 11 is a flow chart of illustrative steps involved in determining for which programming to display a display screen or overlay based on selected information in accordance with the present invention.

FIG. 12 is a diagram of illustrative sequences of illustrative display screens that may be provided based on the illustrative steps of FIG. 11 in accordance with the present invention.

FIG. 13 is a diagram of illustrative sequences of illustrative display screens that may be provided based on the illustrative steps of FIG. 11 in accordance with the present invention.

FIG. 14 is a flow chart of illustrative steps involved in returning a user to an initiating non-program-guide display screen in accordance with the present invention.

FIG. 15 is a diagram of illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 14 in accordance with the present invention.

FIG. 16 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 14 in accordance with the present invention.

FIG. 17 is a flow chart of illustrative steps involved in providing an indicator for information that is related to programming in a non-program-guide application in accordance with the present invention.

5           FIG. 18 is a diagram of an illustrative sequence of illustrative display screens that may be provided based on the illustrative steps of FIG. 17 in accordance with the present invention.

#### Detailed Description of the Preferred Embodiments

10           An illustrative interactive television system 50 in accordance with the present invention is shown in FIG. 1. Main facility 52 may contain a database 54 for storing program guide information such as television program guide listings data, pay-per-view ordering  
15   information, television program promotional information, etc.

          Information from database 54 may be transmitted to television distribution facilities 56 via communications path 58. Only one television  
20   distribution facility 56 is illustrated in FIG. 1 to avoid over complicating the drawings. For clarity, the invention will be primarily discussed in connection with the use of one such television distribution facility.

25           Television distribution facility 56 is a facility for distributing television signals to users, such as a cable system headed, a broadcast distribution facility, or a satellite television distribution facility. Path 58 may be a satellite communications  
30   path, a telephone network communications path, an Internet communications path, a cable or fiber optic communications path, a microwave communications path, a

combination of such communications paths, or any other suitable communications path.

Information transmitted by main facility 52 to television distribution facility 56 includes

5 television program listings data such as program times, channels, titles, descriptions, etc. Transmitted program information also includes pay program data such as pricing information for individual programs and subscription channels, time windows for ordering

10 programs and channels, telephone numbers for placing orders that cannot be impulse ordered, etc.

Information transmitted by main facility 52 to television distribution facility 56 may include advertising information, such as text, graphics, video

15 advertisements, and scheduling information. If desired, some of the program guide and advertising information may be provided using data sources at facilities other than main facility 52. For example, data related to pay program order processing (e.g.,

20 billing data and the like) may be generated by an order processing and billing system that is separate from main facility 52 and separate from television distribution facility 56. Similarly, advertising information may be generated by an advertising facility

25 that is separate from main facility 52 and television distribution facility 56.

Television distribution facility 56 distributes program guide and advertising information to user television equipment 66 for multiple users via

30 communications paths 68 which may carry analog signals, digital signals, or both. User television equipment 66 may be any suitable equipment or device for providing television to a user that contains sufficient processing capabilities to implement an interactive

35 television program guide. Paths 68 may be cable paths,

fiber-optic paths, satellite paths, broadcast paths, or other suitable paths or a combination of such paths. Any suitable analog, digital, or analog and digital communications scheme may be used to transmit data over paths 68, including in-band transmissions (e.g., vertical blinking interval), out-of-band transmissions, digital transmissions, analog transmissions, cable transmissions, satellite transmissions, cable modem transmissions, over-the-air transmissions, multichannel multipoint distribution services (MMDS) transmissions, etc.

Data may be distributed continuously, periodically, on-demand, or in a combination thereof. Paths 68 may be bidirectional, so that functions such as impulse pay-per-view purchases from the program guide and client-server functions may be supported. When services other than program guide services are provided to the user, data may be provided over paths 68 that relates to such non-program-guide services.

Advertising information may be distributed using any of a number of suitable techniques. For example, text and graphics advertisements may be distributed over an out-of-band channel using an out-of-band modulator. Video advertisements may also be distributed in this way, although large quantities of video information may be more efficiently distributed using one or more digital channels or data streams on path 68. Such digital channels or data streams may also be used for distributing text and graphics.

Each user television equipment has a receiver, which may be set-top box 70, but which may be other suitable television equipment such as an advanced television receiver into which circuitry similar to set-top-box circuitry has been integrated, a personal computer television (PC/TV), or a personal computer

(e.g., with a television tuner cord). An interactive television program guide or various non-program-guide applications may be implemented on user television equipment such as set-top box 70. If desired, 5 interactive television applications (e.g., program guide applications and non-program-guide applications) may be implemented partially on user television equipment and partially at a television distribution facility. For example, server 59 at television 10 distribution facility 56 and set-top box 70 at user television equipment may be arranged in a client-server architecture for supporting program guide or non-program-guide applications. If desired, server 59 may be at a different location (e.g., an intermediate 15 node). Data, such as program guide data, may be distributed by server 59 to user television equipment. Data may have been provided to television distribution facility 56 from different facilities with a communications path respective to each facility. For 20 example, program guide data at database 54 of facility 52 may be distributed to television distribution facility 56 via communications path 58.

If desired, an interactive television program guide may be implemented using a data-relay 25 architecture. In such an architecture, television distribution facility 56 may serve as a data-relay site and user television equipment 66 may be a data destination site. For example, television distribution facility 56 may continuously or periodically distribute 30 information as the information is received. In a data-relay architecture, a program guide implemented on user television equipment 66 may use a database (e.g., database 78) for storing program guide and advertising information at user television equipment 66. Program 35 guide information may include program listings and

program attributes. Advertising information may include interactive advertisements and scheduling information.

Television distribution facility 70 may also  
5 poll set-top boxes 70 periodically for certain information (e.g., pay program account information or information regarding programs that have been purchased and viewed using locally-generated authorization techniques). For clarity, the present invention is  
10 described primarily in the context of program guide and non-program-guide applications that are implemented entirely on user television equipment that is a set-top box.

Each set-top box 70 preferably contains a  
15 processor to handle tasks associated with implementing a program guide application or other interactive television application such as a home shopping application, a web browser application, a home banking application, or video-on-demand application, a chat  
20 application, an e-mail application, etc., on the set-top box 70. For clarity, the present invention will be described primarily in the context of interactive television program guide applications, but the invention also applies to other interactive television  
25 applications. Moreover, different configurations may be used for distributing data to user television equipment 66 such as configurations in which program listings and other information may be distributed to user television equipment 66 without passing through  
30 television distribution facility 56 using paths that are separate from communications paths 68. For clarity, the present invention will be described primarily in connection with the illustrative data distribution arrangement shown in FIG. 1. Television  
35 distribution facility 56 may contain a processor (e.g.,

server 59) for handling tasks associated with the distribution of program guide and advertising information.

Each set-top box 70 is typically connected to  
5 an optional videocassette recorder 72 so that selected television programs may be recorded. Each videocassette recorder 72 is connected to a television 74 or other viewing device. To record a program, set-top box 70 tunes to a particular channel and sends  
10 control signals to videocassette recorder 72 (e.g., using infrared transmitter 76) that directs videocassette recorder 72 to start and stop recording at the appropriate times. If desired, any suitable recording device may be used, including digital video  
15 recorders, a digital video disk (DVD) player with recording capabilities, hard disk, etc.

During use of the interactive television program guide implemented on set-top box 70, television program listings may be displayed on television 74 or  
20 other suitable monitor. Each set-top box 70, videocassette recorder 72, and television 74 may be controlled by one or more remote controls 80 or any other suitable user input interface such as a wireless keyboard, mouse, trackball, dedicated set of keys,  
25 touch screen display remote, etc. For clarity, the present invention is described primarily in the context of an interactive television system in which the user input interface device is a remote control. A typical remote control has arrow keys for controlling the  
30 position of a highlight region in a display screen and a select key, such as an OK, ENTER, or ACCEPT key. The remote control may also have other remote control keys such as an information "INFO" key, an record key, channel up or down keys, volume control keys, numeric  
35 keys, etc. By moving the highlight region on an item



of interest and pressing a select key, a user may select information, options, listings, etc.

Communications paths 68 preferably have sufficient bandwidth to allow television distribution facility 56 to distribute scheduled television programming, pay programming, advertising and other promotional videos, and other video information to set-top boxes 70 in addition to non-video program guide and advertising data. Multiple television and audio channels (analog, digital, or both analog and digital) may be provided to set-top boxes 70 via communications paths 68.

Television distribution facility 36 may contain a video server 58 to support video-on-demand applications. With such applications, videos that are stored on video server 58 may be requested by users at user television equipment 66. The videos may then be played back to the users over communications paths 68. Server 59 may be separate from or integrated with server 58

Certain functions such as pay program purchasing may require set-top boxes 70 to transmit data to television distribution facility 56 over communications paths 68. If desired, such data may be transmitted over telephone lines or other separate communications paths. If functions such as these are provided using facilities separate from television distribution facility 56, some of the communications involving set-top boxes 70 may be made directly with the separate facilities.

Users may interactively order additional information, products, or services. Such orders may be satisfied by fulfillment facilities (e.g., fulfillment facility 64). If desired, orders may be transmitted directly to fulfillment facilities via communications

paths which may be telephone paths, the Internet, or other suitable communications paths. Orders may also be transmitted to television distribution facility 56 via paths 68, where the billing system of the television distribution facility may be used. After the television distribution facility 56 has processed the user's order, television distribution facility 56 may transmit the order to a fulfillment facility.

A web browser application implemented on set-top box 70 may allow the user to access the Internet 60. The Internet 60 may be either accessed directly (e.g., via a modem link) or via television distribution facility 56 (using, e.g., a cable modem link), as shown in FIG. 1. Other facilities and services that may be accessed directly or via television distribution facility 56 include banking services (using banking facility 62), shopping services (using fulfillment facility 64), wagering or gaming services (using gaming facility 88), interactive television services (using news facility 82), educational services (using educational facility 84) and information and other services (using data facility 86).

As shown in FIG. 2, user television equipment may include a digital video recorder 90 that may receive control signals, video signals, or both from a set-top box (e.g., set-top box 70 of FIG. 1). Digital video recorder 90 may receive control signals from a user input interface, such as a remote control (e.g., remote control 80 of FIG. 1). Digital video recorder 90 may include a hard-disk drive or another digital storage medium that is used to store programming. The stored programming may be played by digital video recorder 90 and displayed on television 92.

As shown in FIG. 3, user television equipment may include user hardware resources 96 (e.g., set-top

box, television, video cassette recorder, etc.) and  
user application resources 98. User application  
resources 98 may include service-specific applications  
(e.g., a video-on-demand application, interactive  
5 television news application, banking application, home  
shopping application, etc.) and other applications  
(e.g., a navigator application, hardware resources  
driver application, operating system applications,  
etc.). The navigator application may be an application  
10 that provides users with an opportunity to invoke or  
switch between different service-specific applications.

User application resources may include an  
application program interface that provides a software  
interface for accessing features of one application  
15 from another application. For clarity, the present  
invention is described primarily in the context of a  
program guide application program interface that  
provides a software interface for accessing features of  
a program guide application from a non-program-guide  
20 application.

With an application program interface for a  
program guide application, non-program-guide  
applications may be developed to include access to  
program guide features. For example, interactive  
25 applications may be authored using a language, such as  
Java, ECMAScript, etc. The authoring language may  
include some functions that are provided by a program  
guide developer to other developers. The input  
parameter(s) of these functions may include a channel  
30 number, call sign, network name (or other network  
identifier), channel name or (other channel  
identifier), program name (or other program  
identifier), program airing time, etc. The parameters  
may also include other means for identifying television

programming. The code for a specific application may include these functions.

A specific non-program-guide application may be implemented on user television equipment by, for  
5 example, running the executable code for the specific application on the user television equipment. The specific application would then execute the program guide functions when such functions are used in the code for that application.

10 Illustrative steps involved in displaying a display screen or overlay for programming for use in an interactive television system, such as system 50 of FIG. 1, are shown in FIG. 4. At step 100, an interactive program guide application and an  
15 interactive non-program-guide application, such as an interactive television news application, interactive home shopping application, video-on-demand application, etc., may be provided. Each application may be at least partially implemented on user television  
20 equipment (e.g., set-top box 70 of FIG. 1). At step 102, the non-program-guide application may display a non-program-guide display screen to allow the user to interact with the non-program-guide application. At step 104, information, such as text, advertisements,  
25 graphics, etc., that is related to programming (e.g., a program, series, channel, network, package, etc.) may be displayed in the non-program-guide display screen. If desired, step 104 may be a substep of step 102. At step 106, the user may be provided with an opportunity  
30 to select the information from the non-program-guide display screen. If desired, step 106 may be a substep of step 104 or step 106.

At step 108, a display screen or overlay for a particular programming (e.g., a program, channel,  
35 network, package, etc.) that is related to the

information may be displayed when the user selects the information from the non-program-guide display screen. If desired, the display screen or overlay for the particular programming may have been displayed by the  
5 program guide application (e.g., by the non-programming guide application calling a program guide function).

Illustrative non-program-guide display screen 110 and illustrative programming display screen 112 of FIG. 5 may be provided based on the illustrative steps  
10 of FIG. 4. Non-program-guide display screen 110 may include text, graphics, videos, options, etc., that may be intended for providing non-program-guide features and information to users. Non-program-guide display screen 110 may include information 114 having forms,  
15 such as text, video, graphic, advertisement, etc. Information 114 may be related to a particular programming. Programming display screen 112 may be displayed when a user selects information 114 from non-program-guide display screen 110. Display screen 112  
20 may include a text description of the particular programming item and video, graphics, and selectable options that are related to the particular programming item.

The options may include an option to watch  
25 the programming, an option to set a reminder or timer for the programming, an option to record the programming, an option to see additional air times for the programming, an option to purchase the programming or to view ordering instructions, an option to see  
30 listings of programs available on the programming (when the programming is a channel(s)), an option to add the programming or attributes of the programming to user preferences profiles, an option to add the programming to a favorite channel list (when the programming is a

channel(s)), an option to parentally control the programming, or some aspect of the programming, etc.

If desired, the description, video, graphics, advertisement, options, or any combination thereof that  
5 is displayed for the related programming may have been displayed by an interactive television program guide application. For example, programming display screen 112 may be a program guide display screen (e.g., a display screen that is displayed by an interactive  
10 program guide application when the programming-related information 114 is selected from the non-program-guide display screen 110.)

The programming-related information may be an advertisement. For example, illustrative interactive  
15 news application display screen 113 that includes an illustrative advertisement 116 and illustrative programming display screen 118 of FIG. 6 may be displayed based on the illustrative steps of FIG. 4. Interactive television news application display screen  
20 113 may allow a user to interact with the interactive television news application. The provider of the application may be a news company such as CNN. Interactive advertisement 116 may be for the program Burden of Proof. Programming display screen 118 for  
25 Burden of Proof may be displayed when a user selects advertisement 116. Programming display screen 118 may include a text description 120 of the program Burden of Proof (e.g., cast, show time, guests, program content description, TV rating, duration, channel identifier,  
30 network identifier, etc.), video 122 related to the program Burden of Proof (e.g., a video clip of an upcoming episode), graphics 124 related to Burden of Proof (e.g., a logo for the network airing Burden of proof), and selectable options 126 (e.g., set reminder,  
35 parental control, profile, other air times, etc.)

Illustrative sports news display screen 128 having a list a today's events and illustrative programming display screen 132 of FIG. 7 may be displayed based on the illustrative steps of FIG. 5.

5 An interactive television news application may display sports news display screen 128. Sports news display screen 128 may include news-related options and information including a list of today's sports events in which the news application may list programming-  
10 related item 130 for the University of Maryland versus Duke University basketball game and the Georgetown versus Seton Hall basketball game. Programming display screen 132 for the program airing the University of Maryland versus Duke University basketball game may be  
15 displayed when a user selects the Maryland versus Duke basketball game programming-related item 130. Information contained in programming display screen 132 may include a program description that includes program title, air time, duration, channel, network, team  
20 roster, team records, etc. Programming display screen 132 may further include program guide options 134 that are related to the program for the University of Maryland versus Duke University basketball game.

If desired, programming-related information  
25 and options may be displayed in an overlay. For example, illustrative course offerings display screen 136, illustrative course description display screen 138, and illustrative programming overlay 140 of FIG. 8 may be displayed based on the illustrative steps of  
30 FIG. 5. Course offering display screen 136 may include a list of course offerings. If desired, course offerings display screen 136 and course description display screen 138 may have been displayed by an interactive television education application. Course  
35 description display screen 138 may be displayed when a

user selects a course (course #2) from course offerings display screen 136. Course description display screen 138 may include televised lectures option 142 for the selected course offering (course #2). Programming overlay 140 may be displayed in course description displays screen 138 when a user selects the televised lectures option 142. Overlay 140 may include a description of a series of televised lectures for the selected course (course 2) and may include programming-related options, such as a series reminder option or a series record option. If desired, overlay 140 may have been displayed by a program guide application. When a user selects an option, the appropriate program guide feature (e.g., parental control, reminder, profile, etc.) for that option may be invoked. For clarity and brevity, the present invention is primarily discussed in the context of display screens rather than in the context of both display screens and overlays.

Information that is displayed in a non-program-guide application display screen may make reference to a particular program. For example, illustrative banking statement display screen 144, illustrative financial information display screen 148, and illustrative programming display screen 150 of FIG. 9 may be displayed based on the illustrative steps of FIG. 5. Illustrative banking statement display screen 144 may provide the user with an opportunity to interact with an interactive television banking application. Banking statement display screen 144 may include a selectable region 146 that is used to give notice to users of important financial information (e.g., F.Y.I.: New Tax Laws). Financial information display screen 148 may be displayed when a user selects region 146. Financial information display screen 148 may include text discussing the financial information,



such as the new tax laws, and may include a list of resources. The list of resources may include programming related listing 152 "Discussed on 60 minutes." Programming display screen 150 may be  
5 displayed when programming related listing 152 is selected. Programming display screen 150 may include a description of the program referred to in the listing and program guide options. If desired, programming display screen 150 may include program-related video  
10 and graphics.

Information displayed in a non-program-guide application may be related to more than one user television equipment application resources. A non-program-guide application that displays the information  
15 may provide electronic links for these related resources. For example, illustrative display screen 152 and illustrative programming display screen 154 of FIG. 10 may be displayed based on the illustrative steps of FIG. 5. Display screen 152 may include a list  
20 of top stories including a top story for the presidential election. The listing for the presidential election may have link 156 for programming and link 158 for text news. Programming display screen 154 may be displayed when link 156 is selected.  
25 Programming display screen 154 may include a description of a program or programs on that topic and related program guide options. If desired, an advertisement may be included in programming display screen 154.

30 Illustrative steps involved in displaying a display screen or overlay for programming that is related to user-selected information for use in an interactive television system, such as system 50 of FIG. 1, are shown in FIG. 11. At step 156, a user may  
35 be provided with an opportunity to select information

that is related to programming from a non-program-guide application display screen. At step 158, a database of programming information that is stored for use by an interactive program guide application may be accessed  
5 to determine which programming (if any) is related to the selected information. At step 160, a display screen or overlay for the related programming may be displayed. The content of the display screen or overlay that is displayed may vary based on attributes  
10 of the related programming.

Illustrative news display screen 162, illustrative program reminder display screen 164, and illustrative programming display screen 166 of FIG. 12 may be displayed based on the illustrative steps of  
15 FIG. 11. News display screen 162 may include information under the breaking news heading, such as "Channel 7, Eye Team News Discovers Voter Fraud." The program that may be related to the information may be a particular airing of a nightly daily news program  
20 (e.g., the nightly news on Channel 7 at 11:00 p.m. Program reminder display screen 164 may be displayed when the program-related information is selected from news display screen 162. Program reminder display screen 164 may provide the user with an opportunity to  
25 set a reminder for the program. A reminder display screen may have been displayed rather than, for example, an information display screen because the related program is a particular airing of a nightly news program.

30 News display screen 162 may include an advertisement 168 for a premium programming package. Programming display screen 166 may be displayed when advertisement 168 is selected. Programming display screen 166 may include a description of the premium  
35 package and options that are related to the premium

package. Programming display screen 166 may have been determined for display based on attributes of the premium package.

The content of the display screen or overlay that is displayed may vary based on whether the related programming is determined to be an individual program, series, a pay-per-view program, channel, network, package, or a combination thereof. For example, illustrative home shopping display screen 170, illustrative program listings display screen 172, illustrative network display screen 174, and illustrative program display screen 176 of FIG. 13 may be displayed based on the illustrative steps of FIG. 11. Home shopping display screen 170 may include an advertisement 178. Advertisement 178 may be an advertisement for the Food Network Featuring Emery. Network display screen 174 may be displayed when advertisement 178 is selected and it is determined that the programming that is related to advertisement 178 is a network, the Food Network. Network display screen 174 may include a description of the network, related video, related graphic, and related options.

Program display screen 176 may be displayed when advertisement 178 is selected and it is determined that the programming that is related to advertisement 178 is an individual program, Emery Live. Program display screen 176 may include a description of the program and related options. Program listings display screen 172 may be displayed when advertisement 178 is selected and it is determined that the programming that is related to advertisement 178 is a channel or is a combination of a program and the channel that airs the program. Program listings display screen 172 may include current program listings for the related

channel or program listings for the related channel in a time frame that includes the related program.

Illustrative steps involved in returning to a non-program-guide display screen for use in an  
5 interactive television system such as system 50 of FIG. 1, are shown in FIG. 14. At step 180, a display screen for a non-program-guide application is displayed that includes selectable information that is related to programming. At step 182, a display screen or overlay  
10 for the programming may be displayed when the related information is selected. At step 184, the user may be provided with an opportunity to return to the initiating display screen. At step 186, the initiating display screen may be displayed when the user selects  
15 to return to the initiating display screen.

Illustrative video-on-demand display screen 188, and illustrative programming display screen 190 of FIG. 15 may be displayed based on the illustrative steps of FIG. 14. Programming display screen 190 may  
20 be displayed when best movie Oscar program package option 192 from video-on-demand display screen 188 is selected. Programming display screen 190 may include exit option 194 that when selected returns the user to the initiating display screen (video-on-demand display  
25 screen 188).

An exit option may be provided from an overlay. For example, illustrative entertainment news display screen 196 and illustrative overlay 198 of FIG. 16 may be displayed based on the illustrative steps of  
30 FIG 14. Programming overlay 198 for the program series The Sopranos may be displayed when an advertisement for The Sopranos is selected from entertainment news display screen 196. Overlay 198 may include exit option 200 that when selected returns the user to the

initiating display screen, entertainment news display screen 196.

Illustrative steps involved in using an indicator to display a display screen or overlay for related programming for use in an interactive television system, such as system 50 of FIG. 1, are shown in FIG. 17. At step 202, a non-program-guide display screen having information that is selectable and related to programming may be displayed. At step 10 204, an indicator that is associated with the information may be displayed to indicate to the user that the information is related to programming. If desired, at step 204a, the user may be provided with an opportunity to select the indicator. When the user 15 selects the information (or its associated indicator), a display screen or overlay may be displayed for programming that is related to the information at step 206.

Illustrative sports news display screen 208 20 and illustrative programming display screen 210 of FIG. 18 may be displayed based on the illustrative steps of FIG. 17. Sports news displays screen 208 may include under the heading special features a listing for a Walter Payton Biography. The listing may include 25 indicator 212 to indicate to a user that there is programming that is related to the on-screen information. Programming display screen 210 for the Walter Payton Biography program may be displayed when the user presses a remote control "info" key while 30 Walter Payton Biography listing is highlighted in sports news display screen 208.

If desired, the illustrative display screens of FIG. 10 may be provided based on the illustrative steps of FIG. 17. For example, Link 156 that is 35 associated with the presidential election story may be

The foregoing is merely illustrative of the principles of this invention and various modifications  
5 can be made by those skilled in the art without departing from the scope and spirit of the invention.

What is Claimed is:

1. An interactive television system having user television equipment on which an interactive television program guide application and an interactive non-program-guide television application are each at least partially implemented, said user television equipment being configured to:

display information that is related to programming using the non-program-guide application;

provide a user with an opportunity to select the displayed information; and

use the program guide application to display an information display region that includes additional information related to the programming when the displayed information is selected.

2. The system defined in claim 1, wherein the information display region includes a program guide option that is related to the programming.

3. The system defined in claim 1, wherein the information display region includes a plurality of program guide options that are related to the programming.

4. The system defined in claim 1, wherein the information display region includes video that is related to the programming.

5. The system defined in claim 1, wherein the information display region includes a graphic that is related to the programming.

6. The system defined in claim 1, wherein the information display region includes an advertisement for programming.

7. The system defined in claim 6, wherein the advertisement is related to the programming.

8. The system defined in claim 1, wherein the displayed information is an advertisement.

9. The system defined in claim 1, wherein the displayed information is a graphic.

10. The system defined in claim 1, wherein the displayed information is a phrase that is related to the programming.

11. The system defined in claim 1, wherein the displayed information is a word that is related to the programming.

12. The system defined in claim 1, wherein the user television equipment is further configured to display an indicator with the displayed information to indicate to the user that the displayed information is related to programming.

13. The system defined in claim 12, wherein the opportunity to select the information is provided by providing the user with an opportunity to select the indicator.

14. The system defined in claim 1, wherein the user television equipment includes a program guide database of programming information for the program



guide application, and wherein the user television equipment is further configured to access the program guide database to determine which programming is related to the selected information.

15. The system defined in claim 1, wherein the display region is an overlay.

16. The system defined in claim 1, wherein the display region is a display screen.

17. The system defined in claim 1, wherein the user television equipment is further configured to:  
provide the displayed information in a non-program-guide application display screen; and  
provide the user with an opportunity to return to the non-program-guide application display screen when the display region has been displayed.

18. The system defined in claim 1, wherein the programming is a particular program.

19. The system defined in claim 1, wherein the programming is a particular channel.

20. The system defined in claim 1, wherein the programming is a particular network.

21. The system defined in claim 1, wherein the programming is a particular service package.

22. The system defined in claim 1, wherein the non-program-guide application comprises executable code that includes a program guide function that is executed when the displayed information selected.

23. An interactive television system having user television equipment on which an interactive television program guide application having a plurality of program guide features and an interactive non-program-guide television application are each at least partially implemented, said user television equipment being configured to:

display information that is related to programming using the non-program-guide application;

provide a user with an opportunity to select the displayed information; and

display a plurality of on-screen options in a display region when the displayed information is selected, wherein the on-screen options that are displayed are based on attributes of the programming, and wherein the options allow the user to access the plurality of program-guide features.

24. The system defined in claim 23, wherein the display region includes additional information that is related to the programming.

25. The system defined in claim 23, wherein the user television equipment uses the program guide application to display the display region.

26. The system defined in claim 25, wherein the display region includes additional information related to the programming.

27. The system defined in claim 23, wherein the display region includes video that is related to the programming.

28. The system defined in claim 23, wherein the display region includes a graphic that is related to the programming.

29. The system defined in claim 23, wherein the display region includes an advertisement.

30. The system defined in claim 29, wherein the advertisement is related to the programming.

31. The system defined in claim 23, wherein the displayed information is an advertisement.

32. The system defined in claim 23, wherein the displayed information is a graphic.

33. The system defined in claim 23, wherein the displayed information is a phrase that is related to the programming.

34. The system defined in claim 23, wherein the displayed information is a word that is related to the programming.

35. The system defined in claim 23, wherein the user television equipment is further configured to display an indicator with the displayed information to indicate to the user that the displayed information is related to programming.

36. The system defined in claim 35, wherein the opportunity to select the information is provided by providing the user with an opportunity to select the indicator.

37. The system defined in claim 23, wherein the user television equipment includes a program guide database of programming information for the program guide application, and wherein the user television equipment is further configured to access the program guide database to determine which programming is related to the selected information.

38. The system defined in claim 37, wherein the display region includes additional information related to the programming.

39. The system defined in claim 38, wherein the user television equipment is configured to use the program guide application to display the display region.

40. The system defined in claim 23, wherein the display region is an overlay.

41. The system defined in claim 23, wherein the display region is a display region.

42. The system defined in claim 23, wherein the user television equipment is further configured to:  
provide the displayed information in a non-program-guide application display screen; and  
provide the user with an opportunity to return to the non-program-guide application display screen when the display region has been displayed.

43. The system defined in claim 23, wherein the non-program-guide application comprises executable code that includes a program guide function that is executed when the displayed information selected.

Abstract of the Disclosure

An interactive television system with programming-related links is provided. The system may include user television equipment on which interactive  
5 program guide and non-program-guide applications may be implemented. Information that is displayed in a display screen for a non-program-guide application may be related to programming. A display screen or overlay for programming that is related to the information may  
10 be displayed when a user selects the displayed information. The display or overlay for the programming may include advertisements, video, graphics, options, or programming descriptions. The display screen or overlay may have been displayed by  
15 the program guide application.

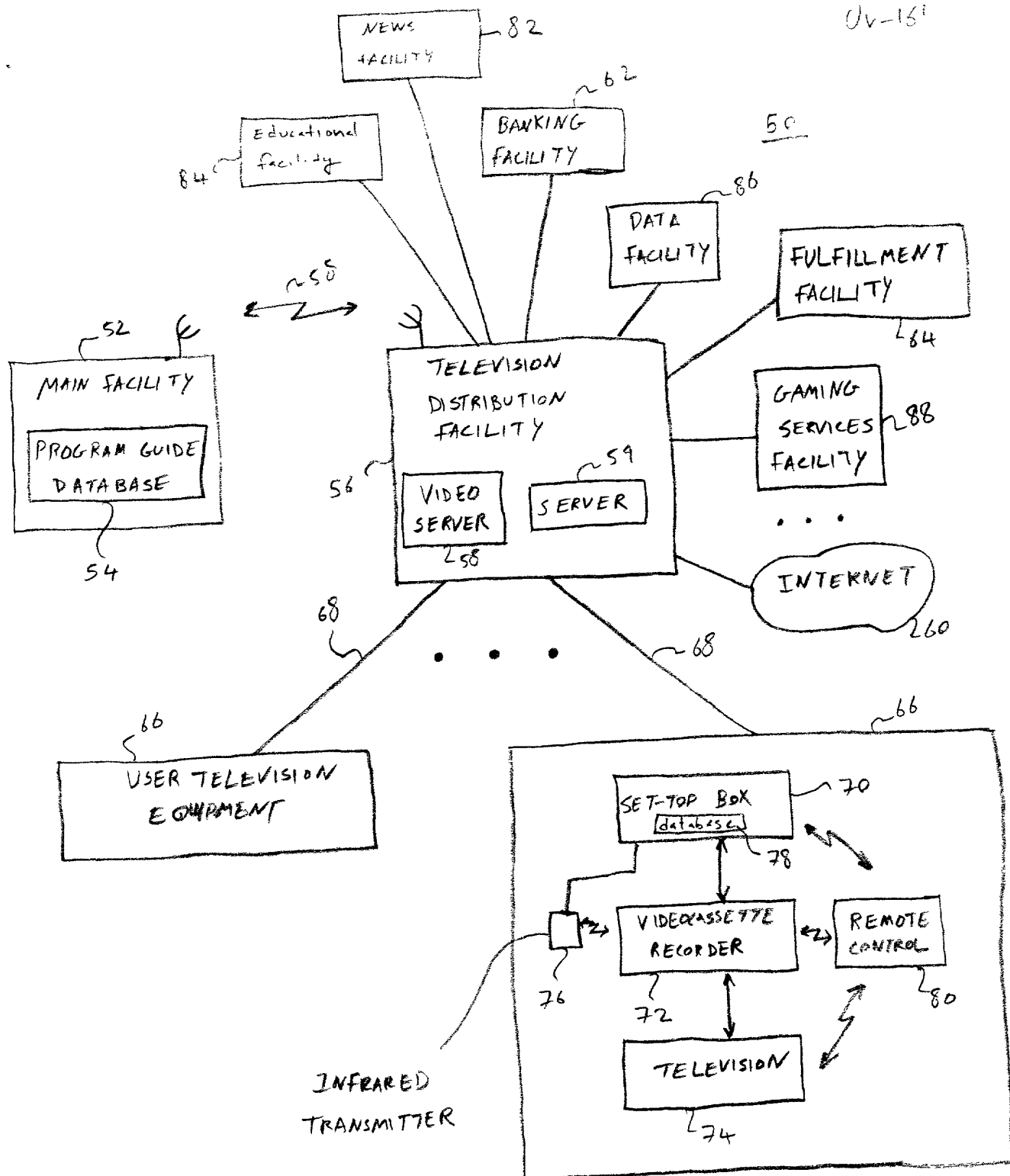


FIG. 1

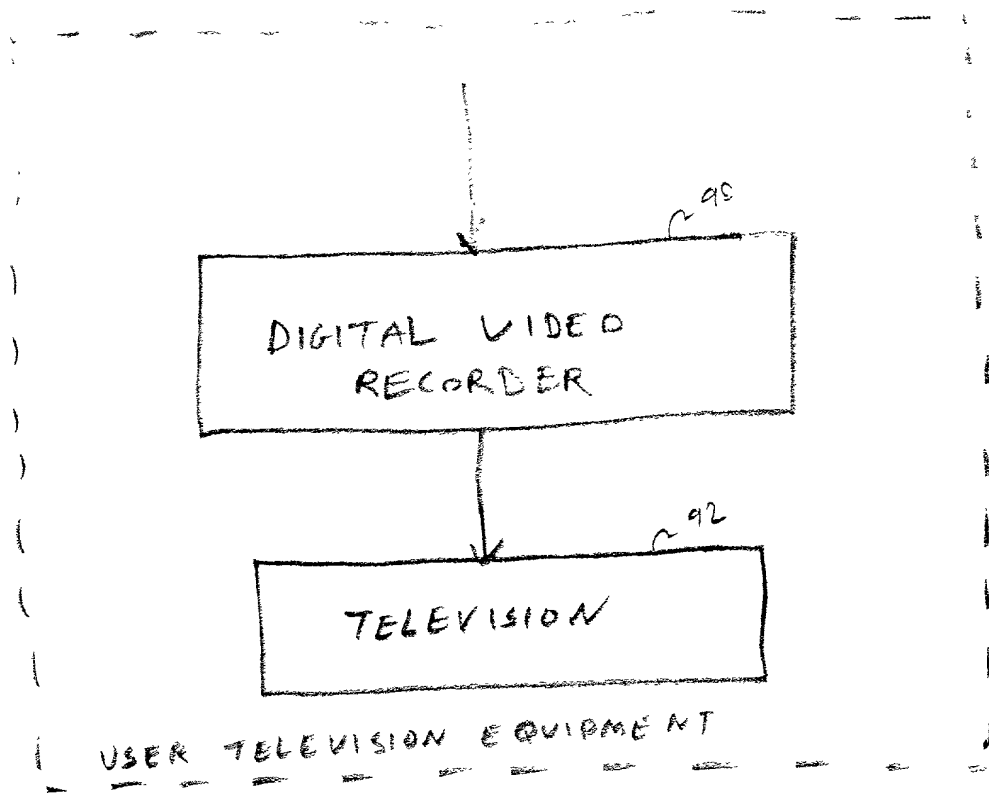
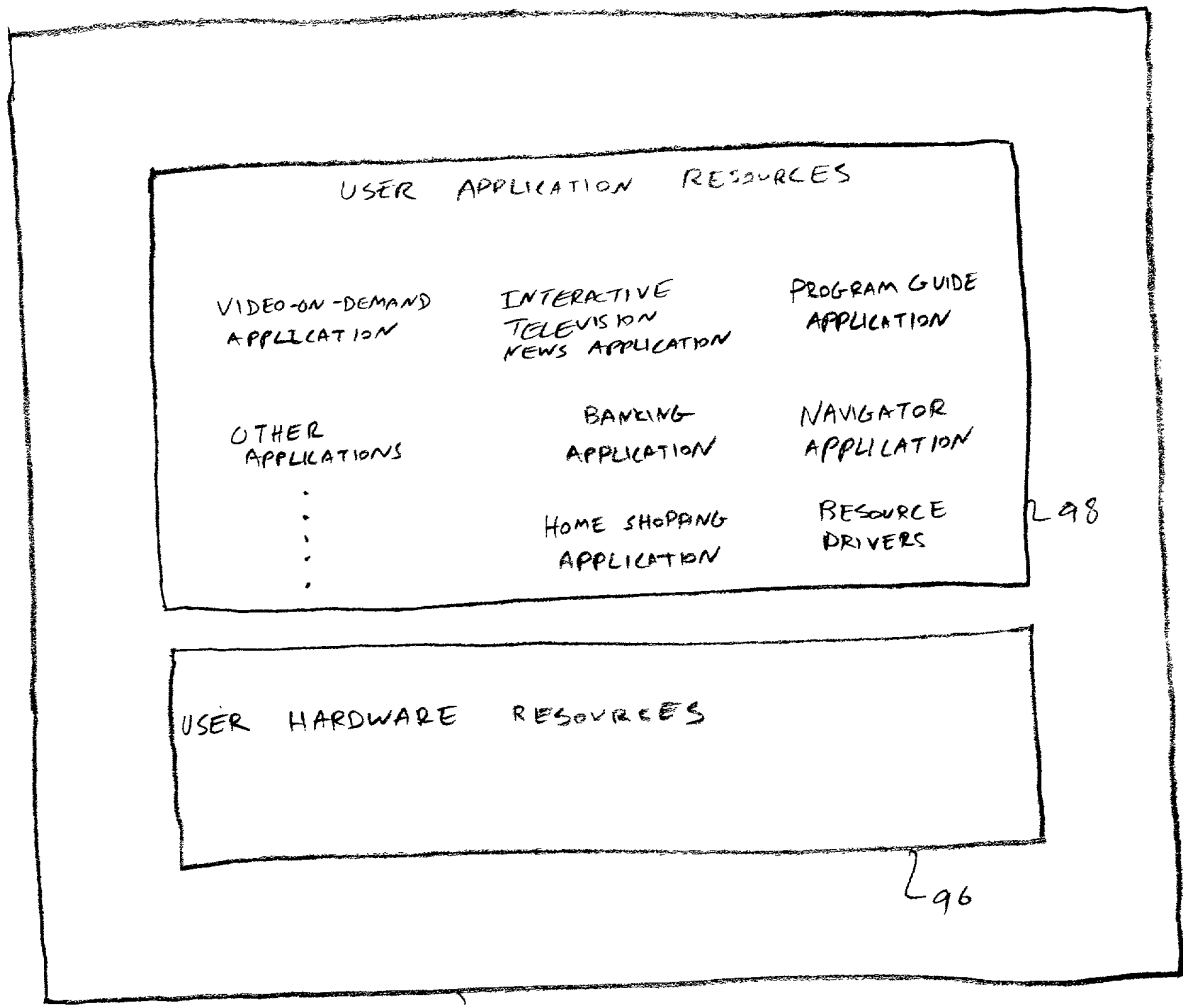


FIG. 2



USER TELEVISION EQUIPMENT

FIG. 3



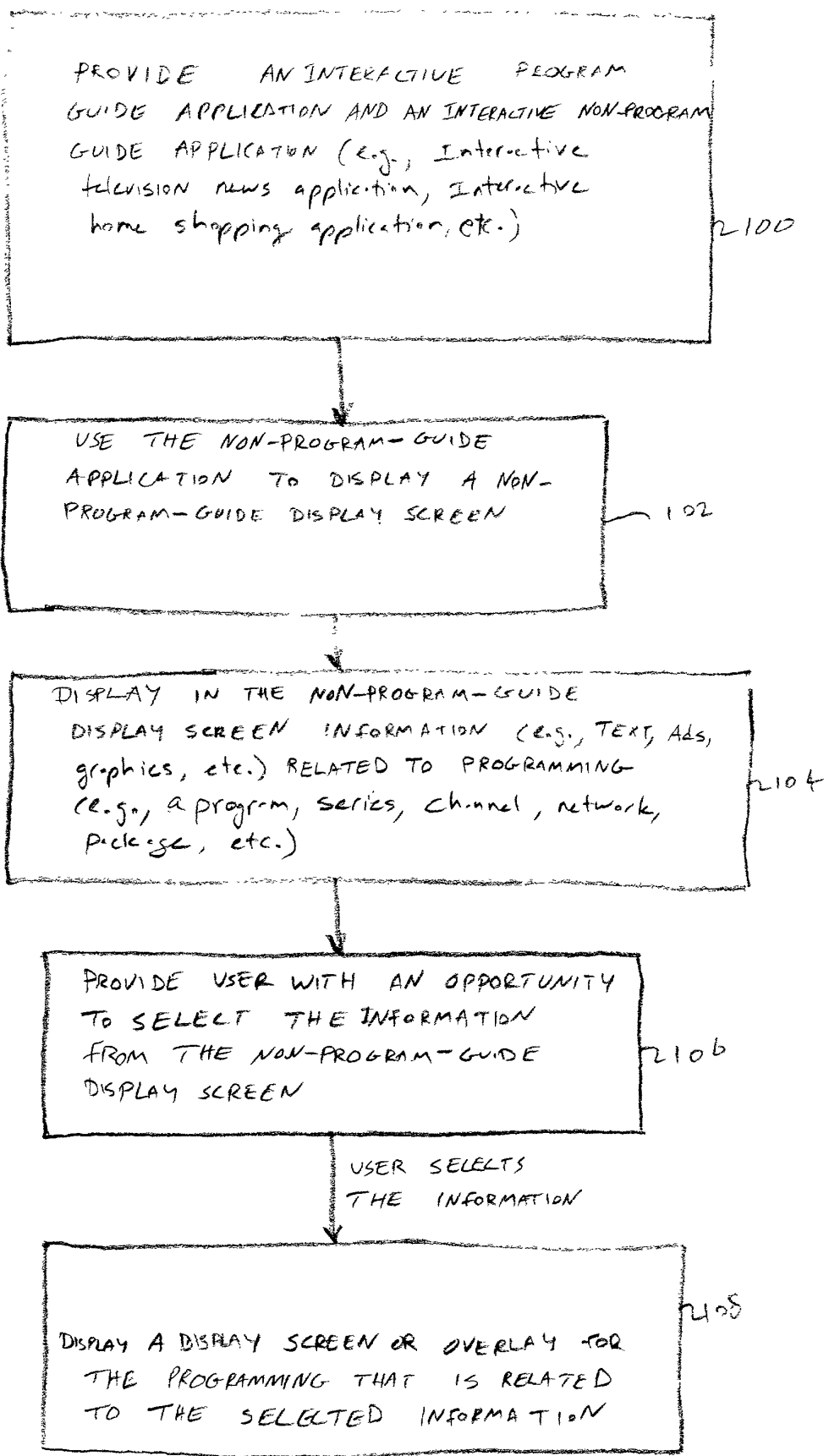


FIG 4

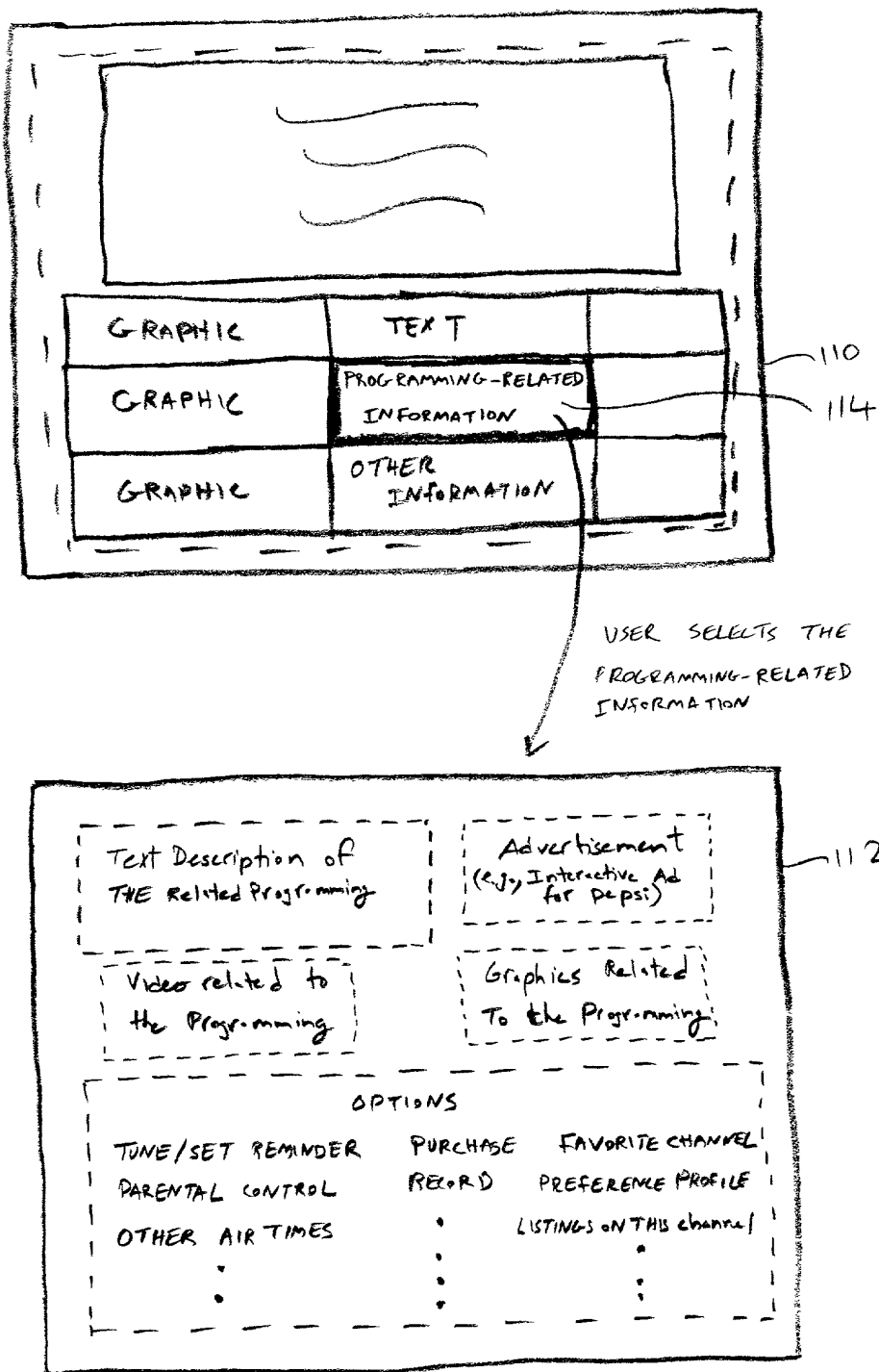
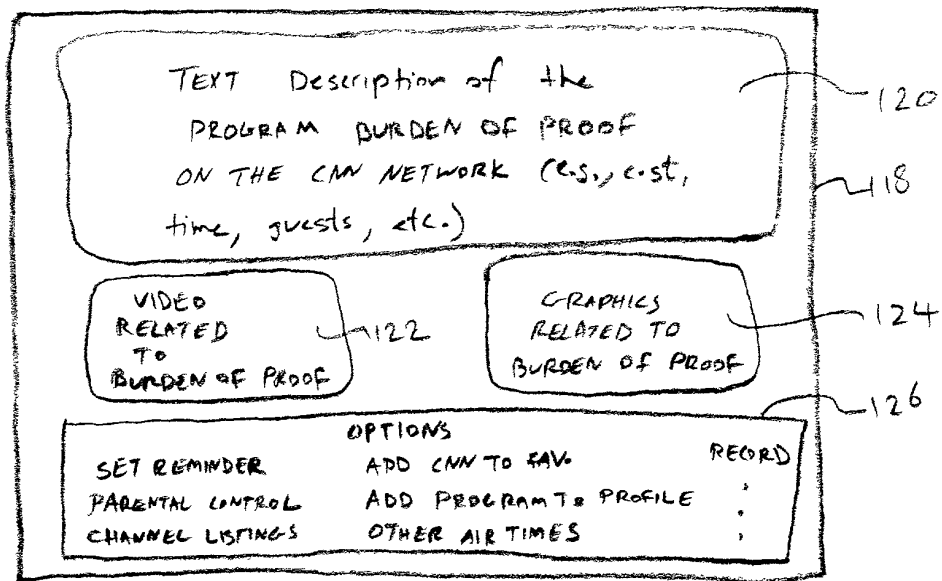
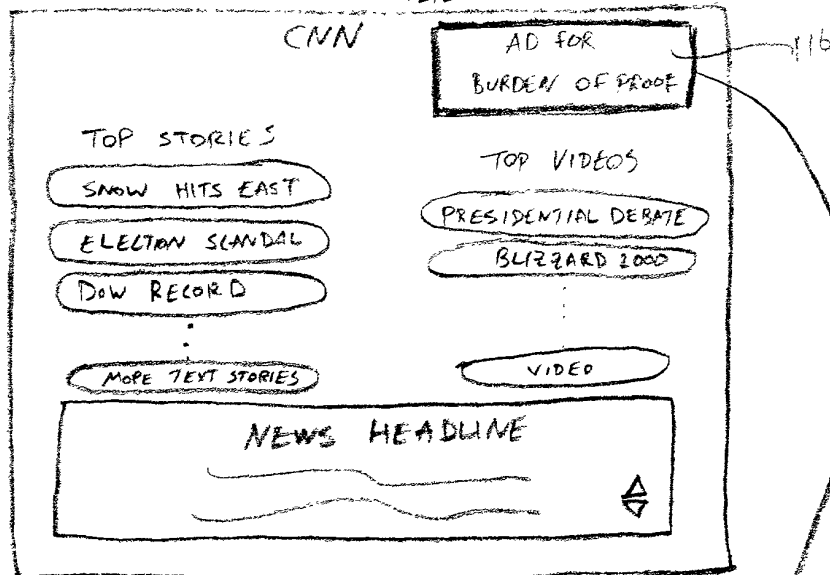


FIG. 5

# INTERACTIVE TELEVISION NEWS APPLICATION



# INTERACTIVE TELEVISION NEWS APPLICATION

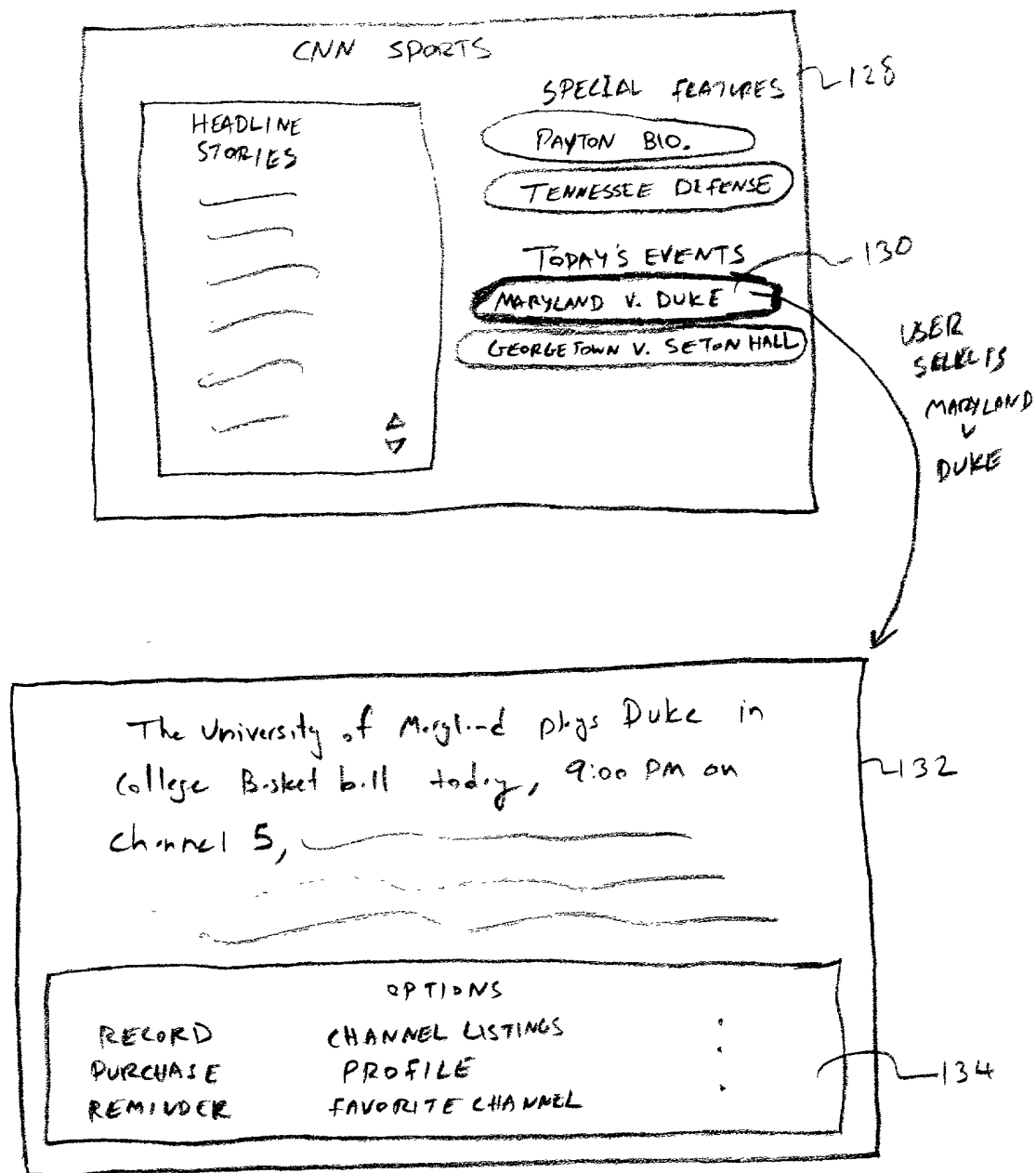


FIG. 7

# INTERACTIVE EDUCATION APPLICATION

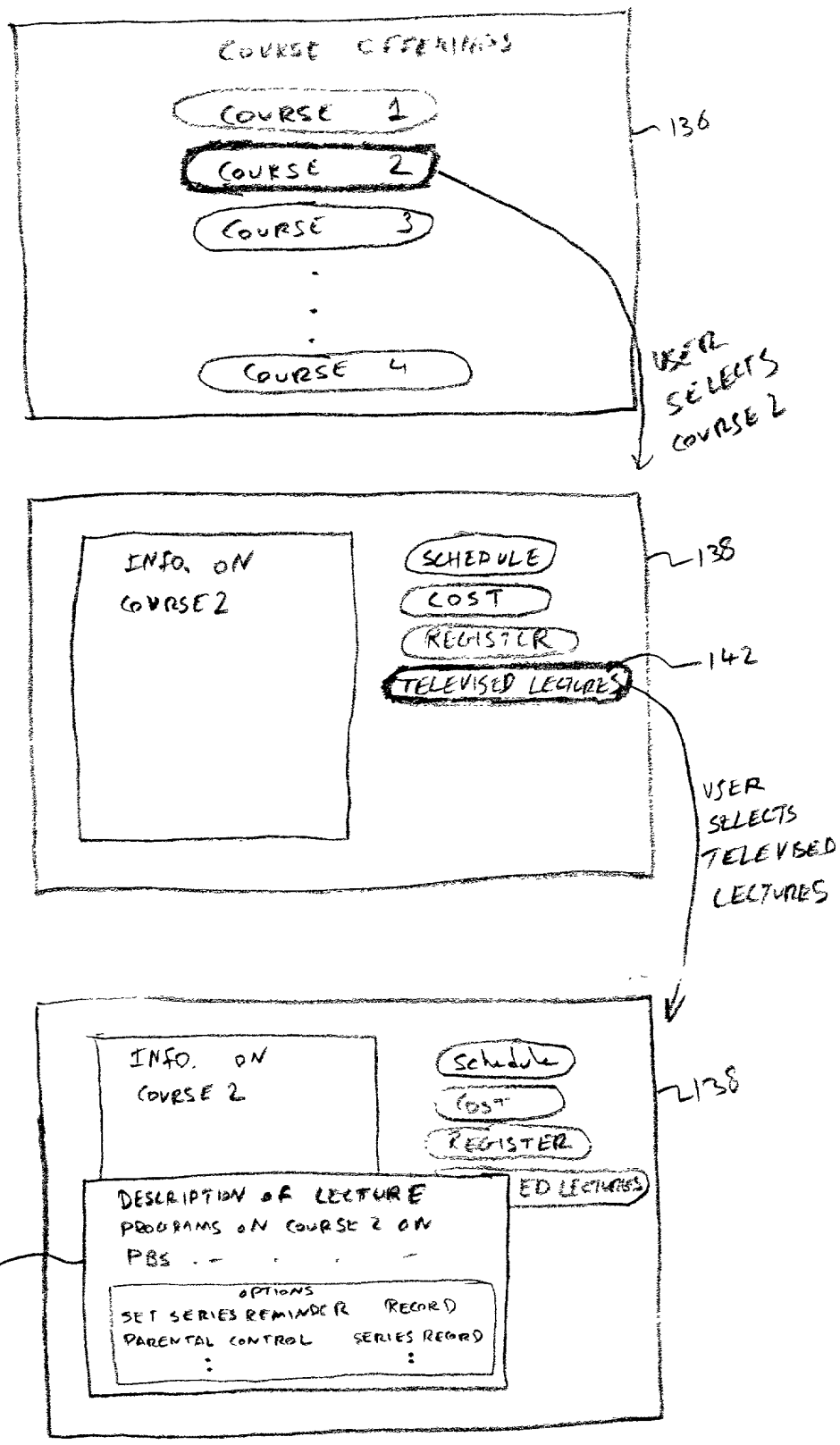


FIG 8

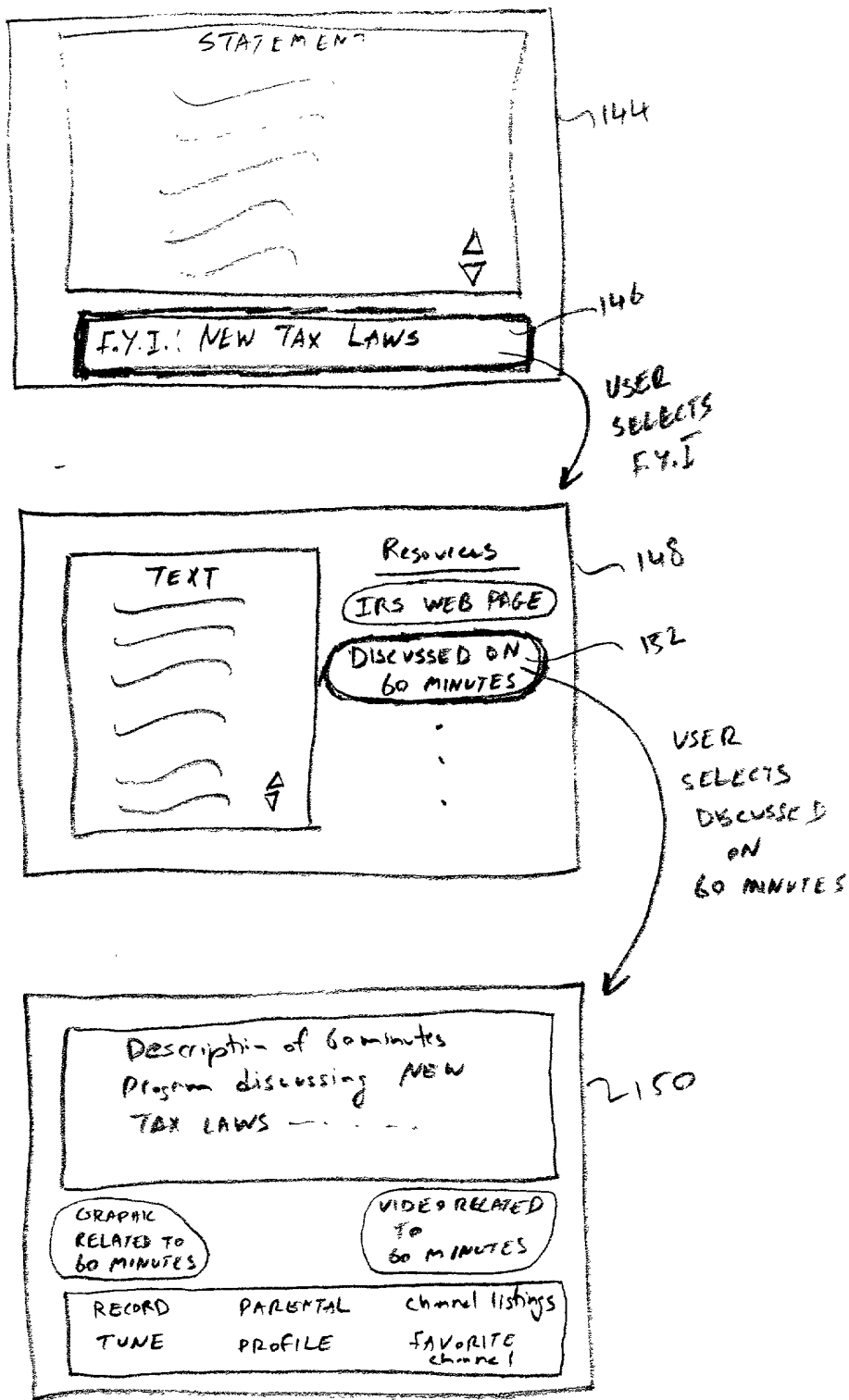


FIG 9

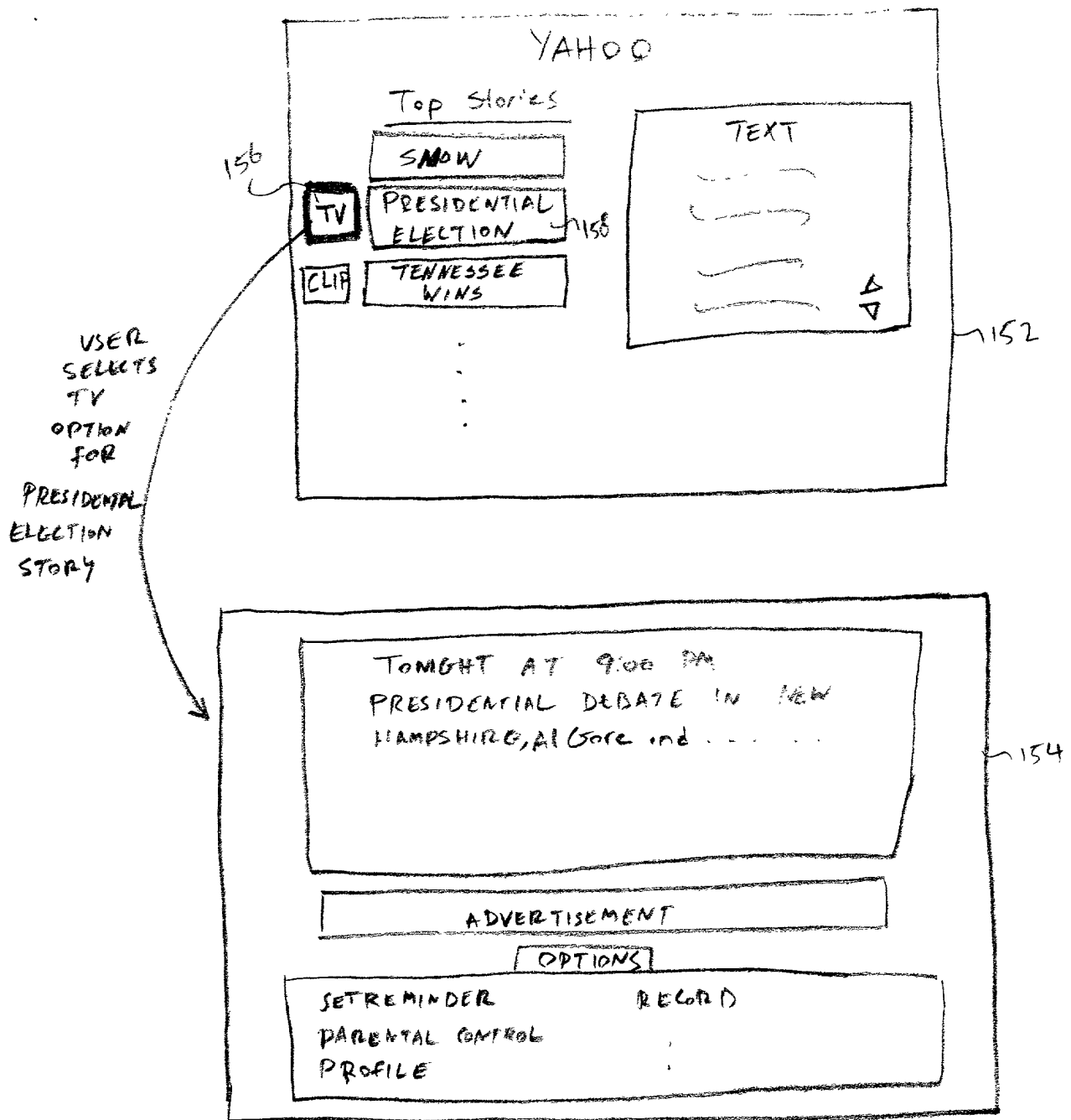


FIG. 10

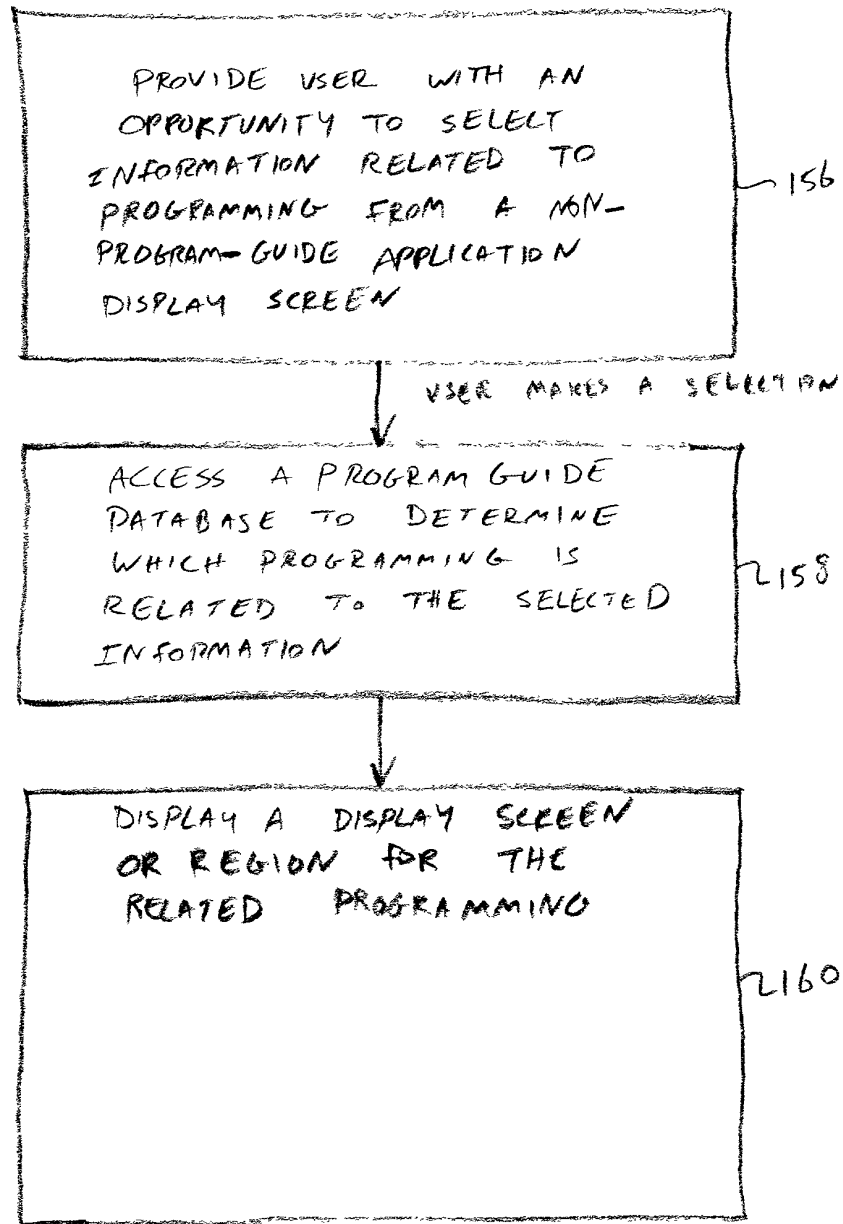


FIG 11



INTERACTIVE TELEVISION  
NEWS APPLICATION

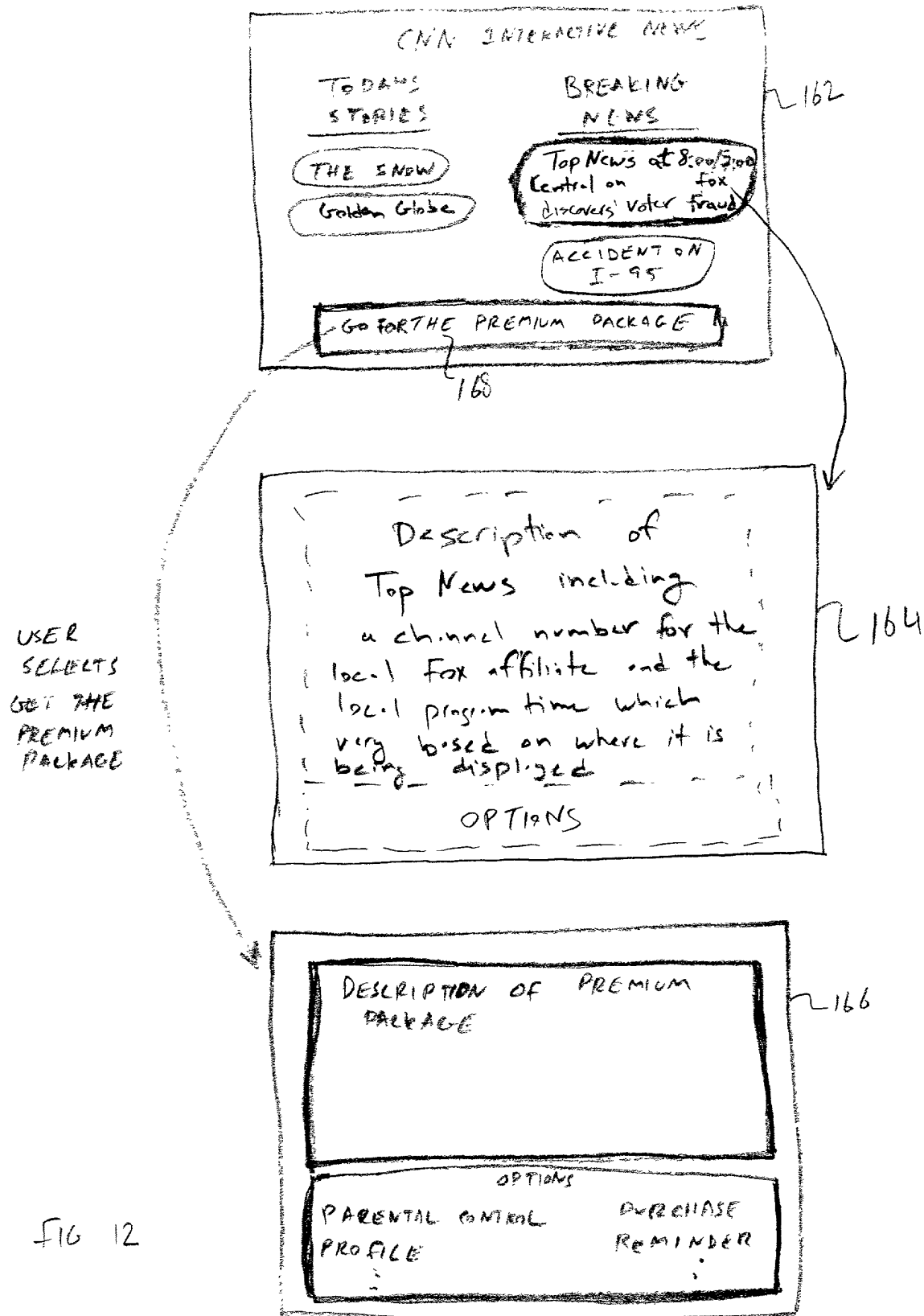


FIG 12

INTERACTIVE HOME SHOPPING  
APPLICATION

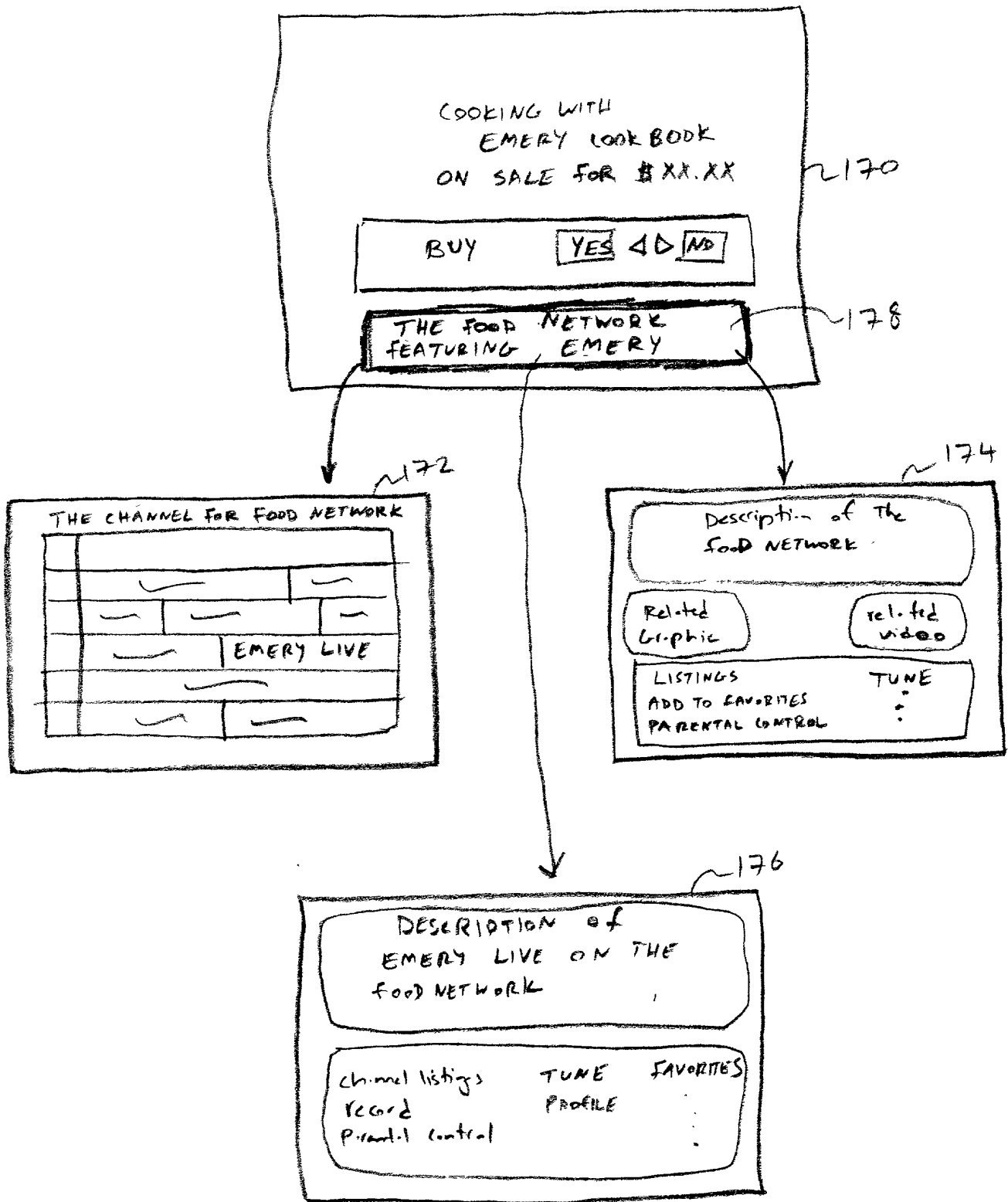


FIG. 13

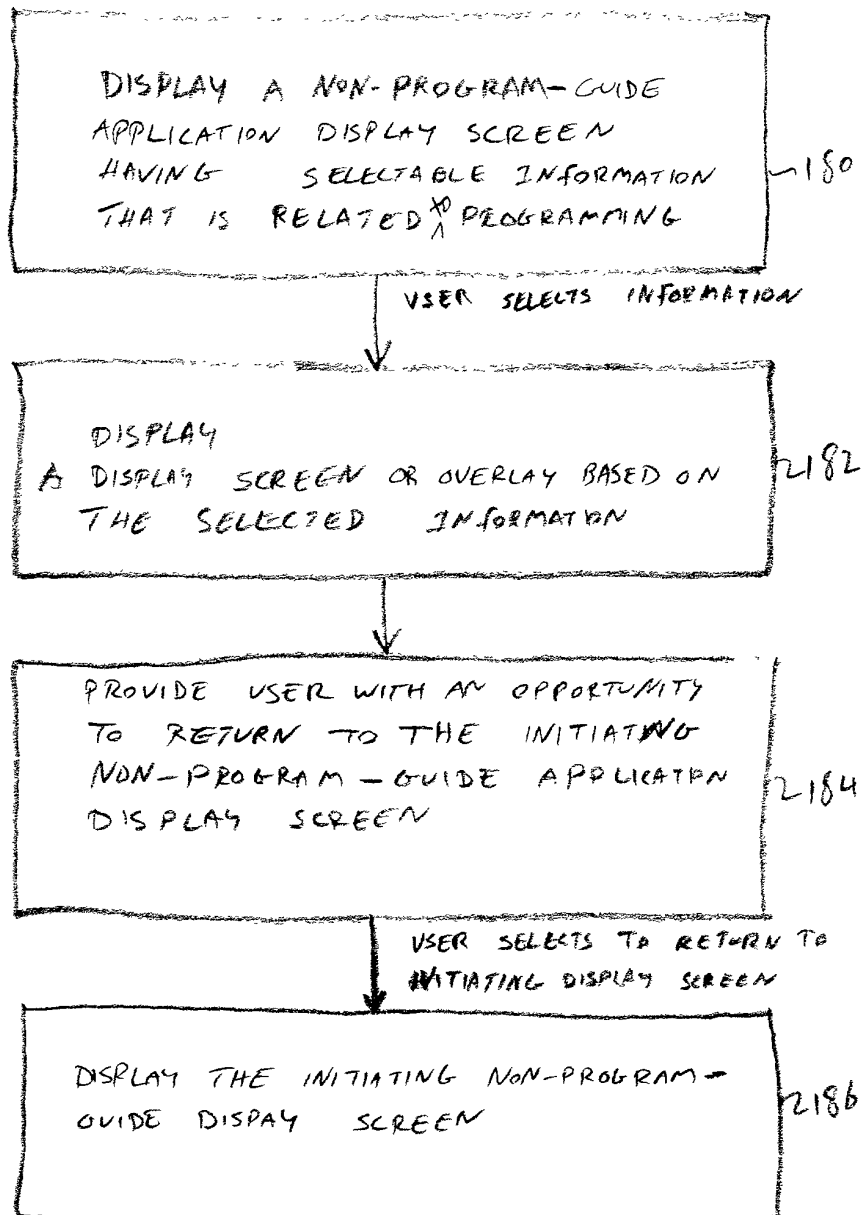


FIG 14

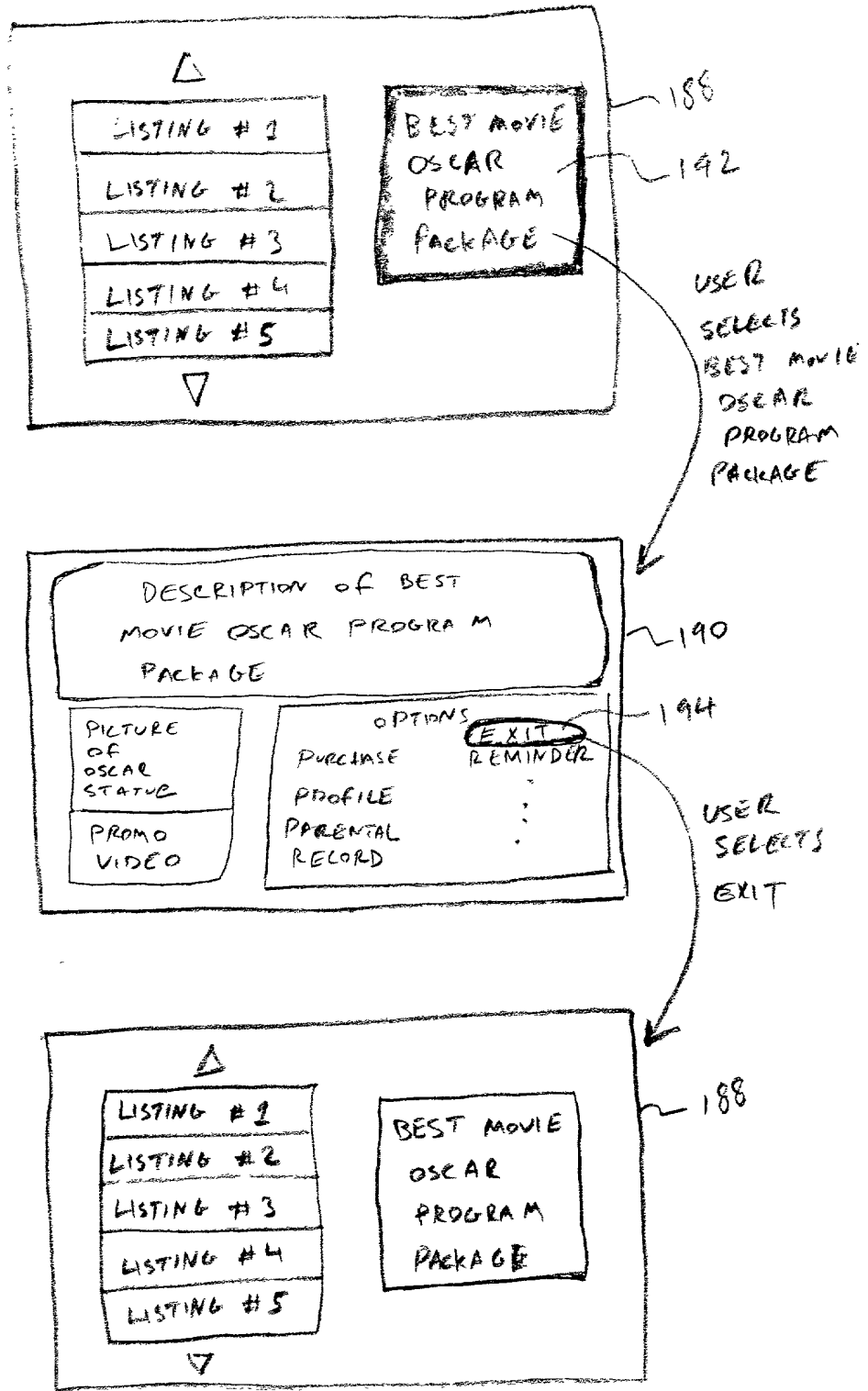


FIG 15

# INTERACTIVE TELEVISION NEWS APPLICATION

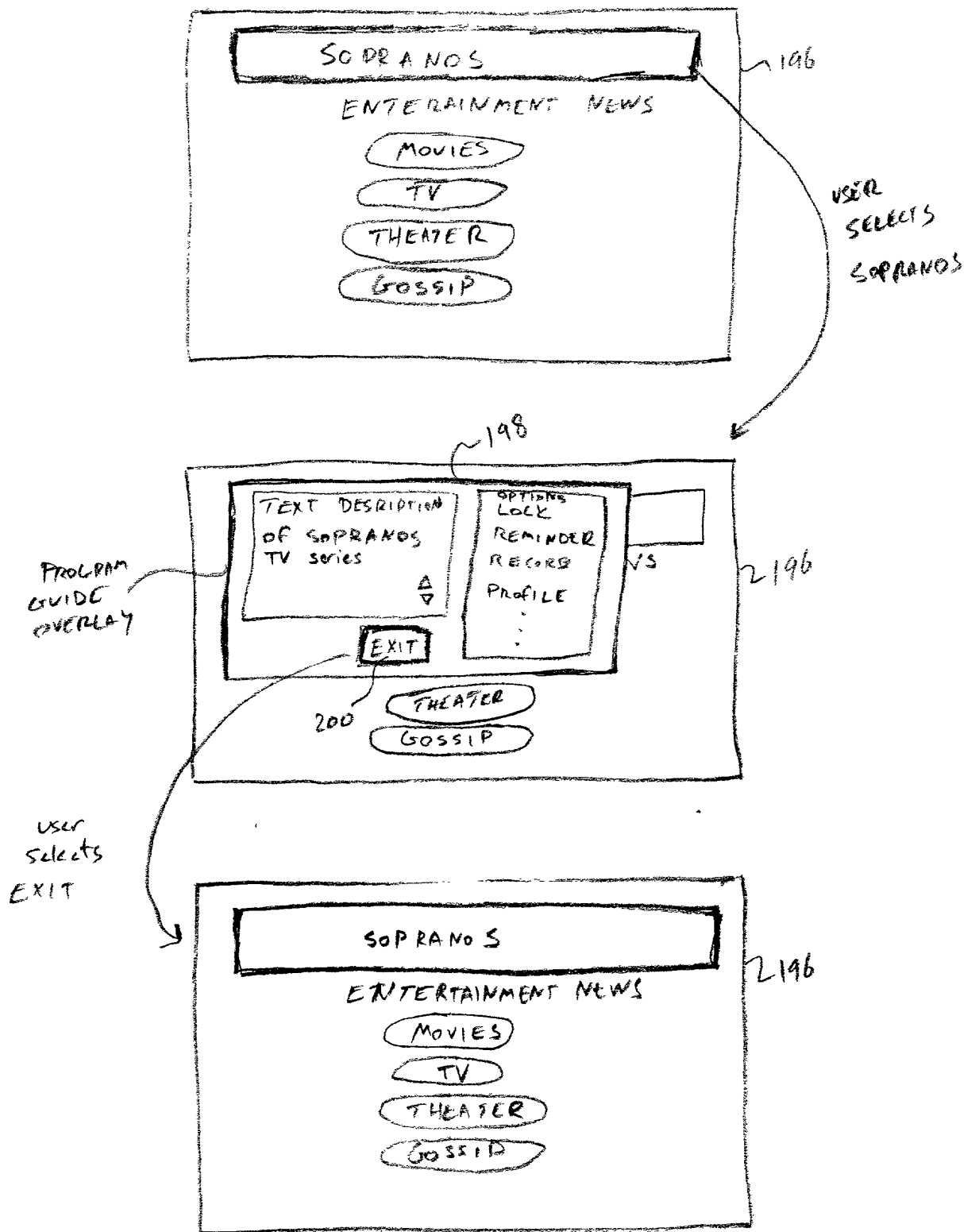


FIG. 16



INTERACTIVE TELEVISION NEWS  
APPLICATION

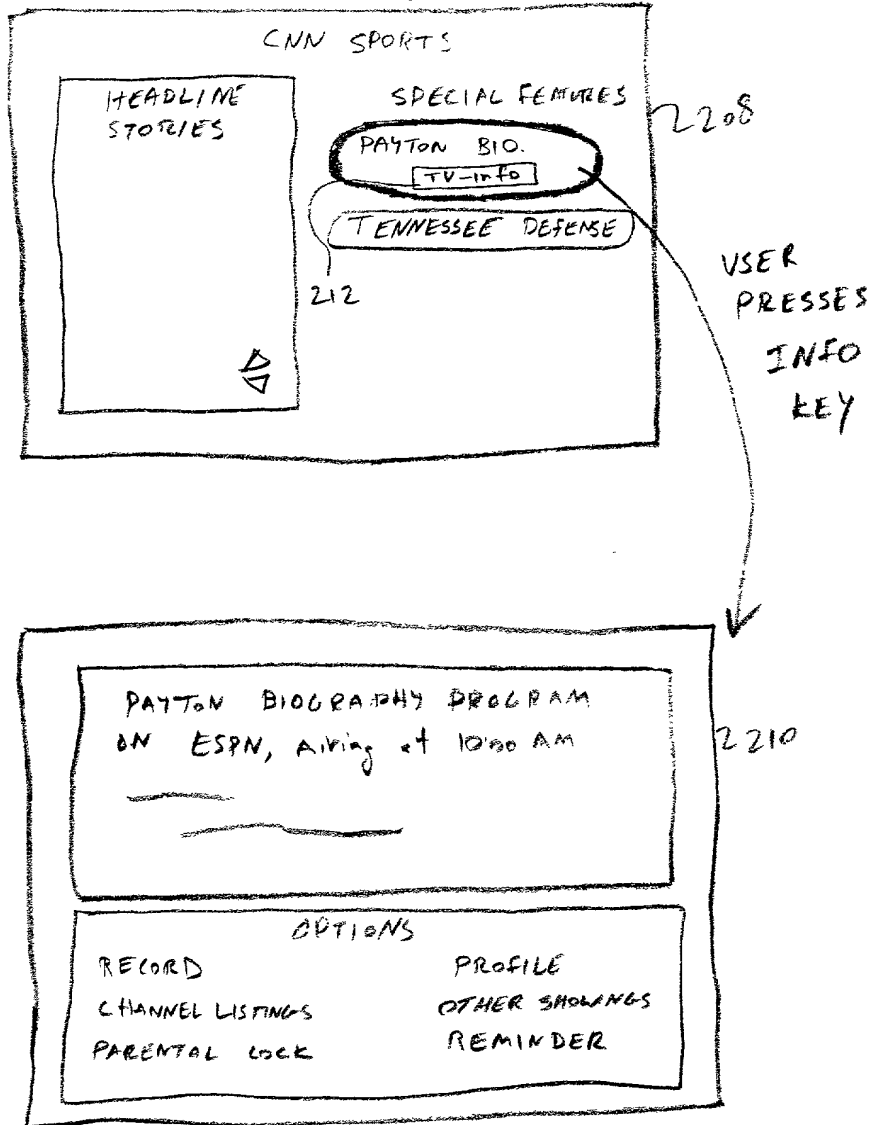


FIG. 18

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INTERACTIVE TELEVISION SYSTEM  
WITH PROGRAMMING-RELATED LINKS

the specification of which

☒ is attached hereto

☐ was filed on \_\_\_\_\_ as  
Application Serial No. \_\_\_\_\_.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I do not know and do not believe that the invention was ever patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application.

I do not know and do not believe that the invention was in public use or on sale in the United States of America more than one year prior to this application.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known by me



to be material to patentability as defined in Title 37,  
Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title  
35, United States Code, § 119(a)-(d) of any foreign  
application(s) for patent or inventor's certificate  
listed below and have also identified below any foreign  
application for patent or inventor's certificate having  
a filing date before that of the application on which  
priority is claimed:

Prior Foreign Application(s)

			Priority
			<u>Claimed</u>
			[ ] [ ]
(Number)	(Country)	(Filing Date)	Yes No

I hereby claim the benefit under Title 35, United  
States Code § 119(e) of any United States provisional  
application(s) listed below.

60/162,484 October 29, 1999  
(Application Serial No.) (Filing Date)

60/165,610 November 15, 1999  
(Application Serial No.) (Filing Date)

I hereby claim the benefit under Title 35, United  
States Code, § 120 of any United States application(s)  
listed below and, insofar as the subject matter of each  
of the claims of this application is not disclosed in  
the prior United States application in the manner

provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known by me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)
--------------------------------------	------------------------	---

As a named inventor, I hereby appoint the following attorneys or agents to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith:

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(212) 596-9105

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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